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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,878	11/20/2003	Eggert Joachim Jung	81655/LPK	9380

7590 03/30/2005

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EXAMINER

LEE, PETER

ART UNIT	PAPER NUMBER
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2852

DATE MAILED: 03/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/717,878

Applicant(s)

JUNG ET AL.

Examiner

Peter Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6 is/are rejected.
- 7) ☐ Claim(s) 5 and 7-10 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/20/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Tyagi et al. (US 5783348).

Tyagi teaches a method for fusing a toner image onto a sheet (abstract 1st sentence), and the practice of changing a surface roughness of a fixing belt in order to control the gloss on the sheet (col. 10 lines 64-67) (ie. adjusting the gloss on a print material) comprising the steps of: using a several different types of belt materials of different surface roughness for the fusing belt (col. 9 lines 65-67) (ie. measuring properties of the fusing medium) to provide the selected degree of gloss (col. 11 lines 40-43) (ie. determining the gloss on a print material on basis of a measured property of the fusing medium).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tyagi et al. (US 5783348) in view of Sugaya et al. (US 2002/0027587).

Tyagi teaches all of the limitations pertaining to claim 1 as laid out above.

Tyagi does not teach the fusing belt system of his invention having a surface sensor for sensing the surface roughness of the fusing belt, and determining if replacement is necessary.

Sugaya teaches a surface sensor (fig. 27 part 150) (ie. measuring device) used to detect a surface roughness of the heating belt (fig. 27 part 147), that is part of the fixing apparatus of the invention. The surface sensor is taught to be able to sense when the surface roughness of the belt has been lowered to a predetermined level that signals a replacement (p. 20 paragraph [0329]) (ie. based on measurement of the properties of the fusing medium the fusing medium is replaced if necessary). Sugaya also teaches in the same embodiment, a CPU (fig. 21 part 110) used for all the computation of data received from sensors inside of the image forming apparatus taught (ie. computer associated with said measuring device).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention taught by Tyagi to have the surface roughness sensor taught by Sugaya. One of ordinary skill in the art would have been motivated to modify the invention to include the surface sensor in order to protect the heating belt of the fixing apparatus and accurately replace the belt when needed (p. 20 paragraph [0329]).

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3. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tyagi as applied to claim 1 above, and further in view of Chen et al. (US 6463250) in view of Satoh (US 2002/0197089).

Tyagi teaches all of the limitations as laid out for claim 1 above.

Tyagi does not teach the fusing medium being provided with a layer of memory alloy, on top of which is applied a further coating of a polymer, that is influenced by temperature changes.

It is Chen et al. who teaches an externally heated deformable fuser roller. The fuser roller of the invention consists of a cylindrical core layer (fig. 2a part 11), on top of which is layered a conformable base cushion layer (fig. 2a part 12) (ie. memory alloy) formed on the core, and finally a toner release layer that is comprised of any suitable elastomeric material (col. 11 lines 34-67) (ie. polymer layer). The conformable base cushion layer is taught to be made of a conformable material that can be influenced by temperature changes (col. 10 line 55- col. 11 line 34).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the fusing member taught by Tyagi to have the conformable base cushion layer and toner release layer as taught by Chen. One of ordinary skill in the art would have been motivated to modify as such in order to reduce the unwanted effects of overdrive and prolong the life of the fuser members (col. 7 lines 1-10).

Although the invention of Tyagi pertains to a fusing belt and the invention of Chen pertains to a fusing roller, it is well known in the art that the two different embodiments of a fusing apparatus can be interchangeable (Chen col. 8 lines 10-12). In addition, Satoh teaches that one of ordinary skill in the art would have been motivated to modify the use of a fuser belt as

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taught by Tyagi into the use of a fuser roller as taught by Chen in order to make use of the heat and pressure fixing method of the roller type fixing apparatus that is known to be more efficient over the belt type (Sato p. 1 paragraph [0009]).

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chen et al (US 6224978) is being cited for teaching a fuser roll with an arrangement of layers that match the limitations of the claims in this invention.

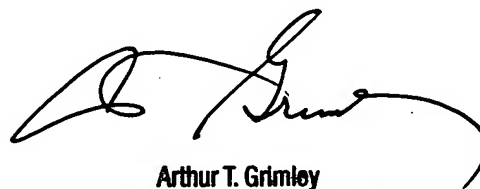
Pickering et al. (US 2002/0197483) is being cited for teaching a fusing apparatus that recognizes the correlation between a surface roughness of the roller and the level of gloss that will be visible on a recording sheet.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Lee whose telephone number is 571-272-2846. The examiner can normally be reached on mon-fri 9:00 am-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on 571-272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PL 3/24/2005

A handwritten signature in black ink, appearing to read 'A. Grimley', with a long, sweeping horizontal line extending to the right.

Arthur T. Grimley
Supervisory Patent Examiner
Technology Center 2800